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CORRES. CONTROL

LTR. NO.

K-H Corres. #


**Rocky Mountain
Remediation Services, L.L.C.**

... protecting the environment

Environmental Technology Site

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Colorado 80402-0464

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AMT-077-97

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July 18, 1997

Tim Hedahl
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IHSS 119.1 CLOSEOUT - AMT-077-97

In response to recent K-H and DOE direction, RMRS has ceased work on the IHSS 119.1 CAD/ROD Amendment. Attached is the rough draft developed prior to notification that DOE would be preparing the document internally. The rough draft is generally complete, but may require modification to incorporate recent changes in direction from EPA. An electronic copy is included for your convenience.

RMRS was in the process of preparing a proposal for a monitoring network including frequency of sampling, and appropriate duration. It is our understanding that K-H would like this effort to continue and for RMRS to provide a recommendation for DOE along with the Data Summary Report of the recent sampling events. RMRS prepared a BCP to descoped the project scope which was submitted on July 10, 1997 to K-H for approval on or before August 13, 1997. The Data Summary Report will be completed on or before August 8, 1997, at which time it will be delivered along with the monitoring proposal to K-H for submittal to DOE.

RMRS has also been informed by DOE that the EPA has changed their opinion on decommissioning of the Collection Well and French Drain at this time. The CAD/ROD amendment must re-address this issue as well. RMRS would recommend continuing monitoring, and cease collection at the Collection Well as long as concentrations remain below Tier I levels. RMRS has concerns, however, about allowing the French Drain to continue to collect water without discharge. RMRS feels that slope stability issues may arise, and does not believe that the French Drain is protective of surface water, either for IHSS 119.1 or industrial area groundwater. A proposal to allow for discharge of the French Drain or to go ahead with decommissioning of the French Drain needs to be presented to the EPA. We will submit a proposal with these concerns and recommendations with the Data Summary Report.

In summary, RMRS will submit the last deliverable for the IHSS 119.1 project on or before August 8. At that time, resources will have been expended to complete the project file and submit to the Records Center. Upon completion, the RMRS Projects Group will have no outstanding actions associated with closure of IHSS 119.1.

RMRS RECORDS (2) X X

RF CORRES. CONTROL X X

TRAFFIC

PATS/T130G

CLASSIFICATION:

UCNI	
UNCLASSIFIED	
CONFIDENTIAL	
SECRET	

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Date:

IN REPLY TO RF CC NO.:

ACTION ITEM STATUS:

☐ PARTIAL/OPEN☐ CLOSED

LTR APPROVALS:

ORIG. & TYPIST INITIALS:

RF-46469 (Rev. 1/97)

 DOCUMENT CLASSIFIED
 REVIEW BY AVALON FOR
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REMOVED RECORD

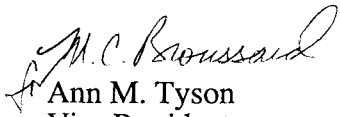
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If you need additional information please contact Marla Broussard at extension 6007, or Wayne Sproles at extension 5790.


Ann M. Tyson
Vice President
Environmental Restoration

MCB/aw

Attachments:
As Stated

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CORRECTIVE ACTION DECISION/RECORD OF DECISION AMENDMENT

SITE NAME AND LOCATION:

Rocky Flats Environmental Technology Site, Operable Unit 1: 881 Hillside Area, Jefferson County, Colorado

LEAD AND SUPPORT AGENCIES:

Lead:

U.S. Environmental Protection Agency (EPA), Office of Ecosystem Protection and Remediation

Support:

U.S. Department of Energy, Rocky Flats Field Office (DOE-RFFO)

Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (CDPHE)

INTRODUCTION

The Corrective Action Decision/Record of Decision (CAD/ROD) Declaration for Operable Unit 1 (OU-1), 881 Hillside Area, Rocky Flats Environmental Technology Site (RFETS) (DOE, 1997) was signed on ???????? by representatives of the EPA, DOE-RFFO, and CDPHE. The CAD/ROD presented the selected remedy for addressing contamination in subsurface soil at Individual Hazardous Substance Site (IHSS) 119.1. Since the signing of the CAD/ROD, new sampling and analysis data were collected at IHSS 119.1. The results from this effort substantially supports the need to significantly alter the response action.

Section 117(c) and (d) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) contains provisions for addressing and documenting changes to a remedy that occur after a ROD is signed. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) section 300.435(c)(2)(ii) also addresses post-ROD information and public comment on post-ROD documentation. In accordance with these provisions and guidance provided in *Guidance on Preparing Superfund Decision Documents*, Interim Final, July 1989, a CAD/ROD Amendment has been prepared for Operable Unit 1: 881 Hillside Area. This CAD/ROD Amendment addresses and documents changes to the previous CAD/ROD declaration and presents the information gained since the time that declaration was signed along with the rationale leading to this amendment. This CAD/ROD Amendment is part of the Administrative Record File per NCP section 300.825(a)(2)). The File is available at the following locations:

Rocky Flats Public Reading Room
Front Range Community College
Level B
3645 West 112th Avenue
Westminster, Colorado 80030

CDPHE
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South
Denver, Colorado 80222

Colorado Council on Rocky Flats
1536 Cole Boulevard, Suite 150
Denver West Office Park, Building 4

Golden, Colorado 80401

Standley Lake Library
8485 Kipling
Arvada, Colorado 80005

EPA Superfund Records Center
999 18th Street
Denver, Colorado 80202

REASONS FOR ISSUING CAD/ROD AMENDMENT

As described in the original CAD/ROD (DOE, 1997), IHSS 119.1 is a former drum and scrap metal storage area. Aerial photographs indicate that these materials were primarily stored north of the Southeast Perimeter Road within IHSS 119.1. The scrap metal may have been coated with residual oils and/or hydraulic coolants (DOE, 1994). The contaminants of concern (COCs) identified in the CAD/ROD at IHSS 119.1 are:

Carbon tetrachloride,
1,1-Dichloroethene,
Tetrachloroethene,
1,1,1-Trichloroethane,
Trichloroethene,
Selenium.

Residual contamination from past releases contaminated the groundwater and subsurface soils localized in the southwest portion of the IHSS and has contributed to the degradation of groundwater quality in the immediate vicinity. The selected remedial action presented in the CAD/ROD included excavation and treatment of volatile organic compound (VOC)-contaminated soil by low temperature thermal desorption and extraction of groundwater entering the excavation for treatment in the existing Building 891 water treatment system. Excavated soil with VOC concentrations greater than the Action Level Framework (ALF) Tier I subsurface soil action levels for the organic COCs (Table 1) (DOE, 1996) were to be treated onsite and returned to the excavation (DOE 1997a).

In accordance with the CAD/ROD, additional sampling was performed downgradient of IHSS 119.1 to verify that a subsurface paleochannel did not contain VOCs at levels that could significantly impact surface water quality. Eleven geoprobe boreholes were located approximately 20 feet apart along the trend of the paleochannel between well 0487 and the southern boundary of IHSS 119.1. These boring were spaced so that the deepest portion of the paleochannel was investigated. Details of downgradient sampling activities can be found in the *Sampling and Analysis Plan for the Downgradient Investigation of IHSS 119.1* (RMRS, 1997a). The results of this sampling, presented in the *Post-CAD/ROD Investigation Report for the 881 Hillside Area, IHSS 119.1* (RMRS, 1997b), indicate that the subsurface paleochannel does not contain VOCs. Of the downgradient samples, all COCs were non-detect at a detection limit of 0.62 parts per million (ppm).

In addition to the sampling performed downgradient of IHSS 119.1, eleven geoprobe boreholes were located within IHSS 119.1 to provide data to accurately determine the occurrence of soils in the IHSS with contaminant of concern (COC) concentrations above the RFCA Tier I subsurface soil action levels. Details of the implementation sampling can be found in *Sampling and Analysis Plan for the Implementation Sampling for the IHSS 119.1 Source Removal Project* (RMRS, 1997c). The determination was necessary for health and safety purposes and because previous estimates, including those presented in the CAD/ROD (DOE 1997), were calculated using the

results of a qualitative measurement technique (i.e., headspace analysis using a field instrument) rather than actual soil concentrations. For Remedial Design/Remedial Action (RD/RA) purposes, these "implementation" samples were collected in the areas tentatively identified in the CAD/ROD for excavation at IHSS 119.1 to more accurately delineate the target area for the remedial action.

The analytical results for the RD/RA implementation samples (RMRS, 1997b) show that the actual soil concentrations of the COCs, if detected at all, are well below the RFCA Tier I subsurface soil action levels (DOE, 1996). Based on these results, it can be concluded that COC concentrations in soil within IHSS 119.1 are not above the RFCA Tier I subsurface soil action levels (DOE, 1996) as previously assumed. Thus excavation and treatment of these soils is not warranted. Because this represents a fundamental change to the remedy, a modification to the OU 1 881 Hillside Area CAD/ROD (DOE, 1997) is necessary to a) present the information gained from the downgradient and implementation borehole sampling, and b) document the rationale for changing the remedy presented in the original CAD/ROD.

DESCRIPTION OF ALTERNATIVES

Six candidate remedial alternatives were compiled from the treatment technologies that passed a detailed screening process conducted during the *Corrective Measures Study/Feasibility Study* (CMS/FS) (DOE, 1995). These alternatives were summarized in the CAD/ROD (DOE, 1997) and from those presented, the original remedy, Soil Excavation with Groundwater Pumping, was selected. However, at the time the original remedy was selected, the subsurface soils at IHSS 119.1 were assumed to be contaminated and act as a residual source to groundwater contamination. Based on the results of the RD/RA implementation sampling, the soil excavation component of the remedy should be eliminated. The amended remedy reflects the lack of a subsurface source of contamination at the IHSS and results in a new alternative: Groundwater Pumping. This alternative will be re-evaluated in this CAD/ROD amendment against the original remedy.

Original Remedy: Soil Excavation with Groundwater Pumping

The selected remedy was intended to achieve RAOs through excavation of contaminated subsurface soils and contaminated groundwater beneath IHSS 119.1 as it entered the excavation. Based on *Sampling and Analysis Report-Identification and Delineation of Contaminant Source Area for Excavation Design Purposes*, April 1996, the estimated volume of contaminated soil that was planned for excavation from IHSS 119.1 was one thousand to two thousand cubic yards. The excavated subsurface soils would have been treated on-site with a thermal desorption unit and returned to the excavation.

Contaminated groundwater entering the excavation would have been extracted from the excavation and treated in the Building 891 treatment system. The existing French Drain and Building 891 treatment system would continue to operate during the remedial activities, but after remediation of the presumed source was complete, the French Drain would have been decommissioned and groundwater collection and treatment would have ceased. Groundwater monitoring would have been performed consistent with the Integrated Water Management Plan after completion of the remedial action.

The remediation time frame presented in the CAD/ROD for the original remedy was estimated to be four to six months including decommissioning of the french drain; however, this time frame excluded monitoring.

Amended Remedy: Groundwater Pumping

Contaminated groundwater will be extracted from the extraction well and treated by the Building 891 treatment system for a period to be specified in the Remedial Action Plan and consistent with the requirements of RFCA (DOE, 1996). The Remedial Action Plan will include the criteria ceasing extraction and treatment. French drain decommissioning will commence immediately.

Consistent with the original remedy, groundwater monitoring will be performed in accordance with the Integrated Water Management Plan after completion of the remedial action.

The remediation time frame for the amended remedy is estimated at six months to one year given that the present downward trend in the COC concentrations in the extraction well is observed. This time frame includes decommissioning of the French Drain but excludes monitoring.

Table 2 presents the components of the original and amended remedy.

SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

Threshold Criteria

Overall Protection of Human Health and the Environment: In the CAD/ROD, the original remedy was ranked the highest among the alternatives considered with respect to overall protection of human health and the environment because it was assumed to provide the largest reduction in exposure potential within the shortest amount of time through the removal of the contamination source (DOE, 1997). Because the soil excavation component is the only factor differentiating the original remedy from the amended remedy (i.e., all other components of the original and amended remedy remain the same), the protectiveness of human health and the environment for the amended remedy is equal.

Compliance with ARARs: ARARs identified in the original CAD/ROD are as follows:

- Classifications and Numeric Standards (5 CCR 1002-8, 3.8, So. Platte River Basin)
- Colorado Basic Standards for Surface Water (5 CCR 1002-8, 3.1, Segment 4a of Big Dry Creek):
- Colorado Hazardous Waste Regulations (6 CCR 1007-3 Parts 264 and 268)
- Colorado Air Pollution Control Regulations (5 CCR 1001-5, Regulation 7)
- Colorado Nongame, Endangered or Threatened Species Conservation Act (CRS 33-2-1001)

In the CAD/ROD, the original remedy was expected to meet all of the ARARs identified. Because the soil excavation component is the only factor differentiating the original remedy from the amended remedy (i.e., all other components of the original and amended remedy remain the same), the ARARs identified will also be met by the amended remedy.

Primary Balancing Criteria

Long-term Effectiveness and Permanence: In the CAD/ROD, the original remedy was ranked highest among the alternatives considered with respect to long-term effectiveness and permanence since it removes both groundwater contamination and subsurface soil contamination sources in IHSS 119.1, thereby preventing any further contamination of groundwater (DOE, 1997). It has been determined through the CAD/ROD implementation sampling in IHSS 119.1 that subsurface soil contamination sources in IHSS 119.1 do not exist and, as a result, further contamination of groundwater is not anticipated. Because the soil excavation component is the only factor

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differentiating the original remedy from the amended remedy (i.e., all other components of the original and amended remedy remain the same), the long-term effectiveness and permanence for the amended remedy is equal.

Reduction of Toxicity, Mobility, or Volume Through Treatment: In the CAD/ROD, the original remedy was ranked highest among the alternatives considered with respect to reduction of mobility because it was assumed that the remedy would remove the primary source of contamination and treat contaminated groundwater. The original remedy was assumed to prevent any further migration of contamination to the groundwater (DOE, 1997). Additionally, the original remedy was ranked highest with respect to the reduction of toxicity and volume through treatment because of the soil excavation and treatment. It has been determined through the CAD/ROD implementation sampling in IHSS 119.1 that subsurface soil contamination sources in IHSS 119.1 do not exist and, as a result, further contamination of groundwater (i.e., contaminant mobility from the a source) is not anticipated. Additionally, without the soil excavation component of the remedy, additional reduction of toxicity and volume will not be realized. Because the soil excavation component is the only factor differentiating the original remedy from the amended remedy (i.e., all other components of the original and amended remedy remain the same), achievement of a reduction of contaminant mobility, toxicity and volume through treatment for the amended remedy is equal.

Short-term Effectiveness: This criterion evaluates community, environmental and site worker protection during implementation of the remedy. It also evaluates the effectiveness and reliability of protective measures during implementation and the time until RAOs are achieved.

With respect to community, environmental, and site worker protection during implementation, the original remedy was ranked similarly to the other alternatives considered because, other than the no action and institutional control alternatives, all included some site disturbance (DOE, 1997). Comparing the original remedy to the amended remedy, the potential for site disturbance is reduced because soil excavation will not occur. Decommissioning of the French Drain is the same for both the original and amended remedy. The short-term impact for the amended remedy is therefore considered higher than the original remedy.

With respect to the effectiveness and reliability of protective measures during implementation and for the time until RAOs are achieved, the original remedy was ranked the highest with respect to the other alternatives. This ranking was assigned because, as stated in the CAD/ROD, excavation was considered to be the most effective and reliable of the technologies considered (DOE, 1997). Comparing the original remedy to the amended remedy, the need for protective measures during implementation is reduced because soil excavation will not occur. Decommissioning of the French Drain is the same for both the original and amended remedy. The rank of the amended remedy is therefore considered higher than the original remedy.

For the original remedy, compliance with RAOs was anticipated to be achieved in four to six months, the time necessary to complete the soil excavation. It has been determined through the CAD/ROD implementation sampling in IHSS 119.1 that subsurface soil contamination sources in IHSS 119.1 do not exist and, as a result, further contamination of groundwater is not anticipated and the RAOs with respect to this portion of the remedy are achieved at present.

Implementability: This criterion evaluates the technical and administrative feasibility of implementing the alternative including the availability of materials and services needed during implementation, as well as the ability to monitor the effectiveness of the remedy.

In the CAD//ROD, the original remedy was ranked medium in comparison to the other alternatives considered with respect to implementability (DOE, 1997). This ranking was applied because excavation was considered effective and the equipment necessary to excavate and treat

the contaminated soil was readily available. Because the soil excavation component is the only factor differentiating the original remedy from the amended remedy (i.e., all other components of the original and amended remedy remain the same), the amended remedy is considered to rank higher (i.e., is easier to implement) than the original remedy because excavation and treatment will not occur.

Cost: This criterion evaluates the capital cost for each alternative, long-term operation and maintenance (O&M) expenditures required to sustain it, and post-closure care costs occurring after the completion of remediation. Future expenditures are adjusted to present worth amounts by discounting all costs to a common base year using present worth cost analysis.

The cost of the original remedy presented in the CAD/ROD was \$3.5 million. The cost of the amended remedy are reduced substantially because the soil excavation component and treatment costs are eliminated. The cost of the amended remedy is estimated to be \$ 2.5 million.

Modifying Criteria

State Acceptance: This criterion addresses the State's comments and concerns regarding the appropriateness of the selected remedy. The State of Colorado was represented during meetings which lead to the elimination of the soil excavation component of the original remedy and agreed with the amended remedy. At that time, the State had no outstanding, significant comments or concerns with the amended remedy.

Community Acceptance: This criterion evaluates the selected remedy (original or amended) in terms of issues and concerns raised by the public through the public involvement process. ALL COMMENTS RECEIVED ON THE AMENDED REMEDY ARE ADDRESSED IN THE ATTACHED RESPONSIVENESS SUMMARY.

Anticipated Damages to Natural Resources: The amended remedy will not result in any irreversible damages to natural resources and the quality of groundwater will improve by treatment and natural degradation processes.

THE AMENDED REMEDY

The components of the amended remedy are detailed below:

- 1) The elements of the amended remedy for IHSS 119.1 selected to meet the RAOs included:

Downgradient investigation: DOE will perform confirmatory soil sampling downgradient of IHSS 119.1 to verify that a contamination source does not exist there. A detailed sampling and analysis plan will be prepared.

Groundwater extraction and treatment: Groundwater will continue to be extracted from the extraction well and transferred to the existing Building 891 treatment system for final treatment and discharge.

French Drain Decommissioning: The French Drain system will be decommissioned and its use will be discontinued. The final details of the decommissioning of the French Drain system will be presented in the RD for OU 1.

Groundwater monitoring: DOE anticipates that groundwater monitoring will be performed at IHSS 119.1, consistent with the Integrated Water Management Plan, after the remedial action is complete. The details of this groundwater monitoring will be presented in the RD.

2) Institutional controls will be maintained throughout the OU 1 area in a manner consistent with RFCA, Rocky Flats Vision, and the ALF. These documents recognize the reasonably foreseeable future land use for the OU 1 area is restricted open space. The institutional controls will ensure that the restricted open space land use is maintained for the OU 1 area and that domestic use of groundwater is prevented. If the reasonably foreseeable future land use for OU 1 area changes when final sitewide land use decisions are made, this remedy will be reexamined to ensure protectiveness of human health and the environment. The specific mechanisms (for example, deed restrictions) to ensure the implementation and continuity of the necessary institutional controls have not been included in this CAD/ROD amendment. Currently, these mechanisms are envisioned to be placed in the Final Sitewide CAD/ROD or incorporated during one of the five-year reviews of this document. However, should the Final CAD/ROD not occur or not include these institutional control mechanisms, the OU 1 CAD/ROD and/or the CAD/ROD amendment will be revised to include them, if it does not already include them as a result of a five-year review. The institutional controls can also be removed at one of the above times, if it is deemed appropriate to do so by the parties.

3) Because of the groundwater and land use controls, the low amounts of contamination in OU 1 outside of IHSS 119.1, and the low levels of risk associated with the contamination, no remedial action will be taken at the remaining IHSSs in OU 1.

Implementing the amended remedy will not result in any irreversible damages to natural resources. Wetlands will not be injured; flood elevations will not be affected; and no permanent displacement or loss of wildlife will result from the implementation of the amended remedy.

STATUTORY DETERMINATIONS

The amended remedy for OU 1 satisfies the statutory requirements of CERCLA Section 121. The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. The remedy satisfies the statutory preference for remedies that employ treatment that reduces, toxicity, mobility, or volume as a principal element. Because this remedy will result in hazardous substances remaining in groundwater, a review will be conducted within five years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

REFERENCES

- DOE, 1994. *Final Phase III RCRA Facility Investigation/Remedial Investigation*, Rocky Flats Plant, 881 Hillside Area, Operable Unit 1, Department of Energy, Rocky Flats Plant, Golden Colorado, June 1994.
- DOE, 1995. *OU-1, 881 Hillside Area, Corrective Measures Study/Feasibility Study*, Department of Energy, Rocky Flats Environmental Technology Site, Golden Colorado, February 1995.
- DOE, 1996. *Final Rocky Flats Cleanup Agreement*, Department of Energy, Rocky Flats Environmental Technology Site, Golden Colorado, July 16, 1996.
- EPA, 1989. *Guidance on Preparing Superfund Decision Documents*, Interim Final, July 1989
- RMRS, 1996. *Sampling And Analysis Report, Identification and Delineation of Contaminant Source Area For Excavation Design Purposes*, IHSS 119.1, Operable Unit 1, Department of Energy, Rocky Flats Environmental Technology Site, Golden Colorado, April 1996.
- DOE, 1997. *Corrective Action Decision/Record of Decision, Operable Unit 1, 881 Hillside Area*, Department of Energy, Rocky Flats Environmental Technology Site, Golden Colorado, February, 1997.
- RMRS, 1997a. *Sampling and Analysis Plan for the Downgradient Investigation of IHSS 119.1*, Department of Energy, Rocky Flats Environmental Technology Site, Golden Colorado, April, 1997.
- RMRS, 1997b, *Post-CAD/ROD Investigation Report for the 881 Hillside Area, IHSS 119.1*
- RMRS, 1997c, *Sampling Analysis Plan for Implementation Samples for the IHSS 119.1 Source Removal Project, IHSS 119.1*, Rocky Flats Environmental Technology Site, Golden, Colorado, RF/RMRS-97-009, April, 1997.

Table 1. RFCA Tier 1 Subsurface Soil Action Levels, Results of the Downgradient and IHSS 119.1 Investigation.

COC	ACTION LEVEL (MG/KG)	DOWNGRADIENT INVESTIGATION - FOD ¹	DOWNGRADIENT INVESTIGATION RESULTS (MG/KG)	IHSS 119.1 BOREHOLE SAMPLING - FOD ¹	IHSS 119.1 BOREHOLE SAMPLING RESULTS (MG/KG)
Carbon Tetrachloride	11.0	0/13	0.62 U	0/38	0.62 U
1,1-Dichloroethene	11.9	0/13	0.62 U	2/38	0.17J - 0.23J ²
Tetrachloroethene	11.5	0/13	0.62 U	3/38	0.16J - 0.66 ²
1,1,1-Trichloroethane	378	0/13	0.62 U	2/38	0.16J - 0.28J ²
Trichloroethene	9.27	0/13	0.62 U	2/38	0.34J - 0.55J ²

¹FOD = Frequency of Detection represents the number of detections/number of samples. Number of samples does not include duplicates.

² Range of detected values.

U = COC was not detected at the level indicated.

J = estimated concentration at the level indicated. The concentration represents a value below the detection limit.

Table 2. Primary components of the Original and Amended Remedies for OU 1.

Original Remedy	Amended Remedy
<p>1) The principal components of the original remedy at IHSS 119.1 selected to meet the RAOs included:</p> <p><u>Excavation of soil:</u> Excavation of contaminated subsurface soils was in two contamination sources areas identified during a 1996 soil gas survey. The location of these two areas was identified in the CAD/ROD. From the soil gas survey results, it was estimated that the amount of soil that to be excavated was one thousand to two thousand cubic yards. During the excavation, sampling was to be performed to confirm the point at which all contaminated subsurface soil had been removed, in accordance with the ALF. A detailed soil excavation plan and sampling and analysis plan would be prepared as part of the RD.</p> <p><u>Downgradient investigation:</u> DOE would perform confirmatory soil sampling downgradient of IHSS 119.1 to verify that a contamination source does not exist there. A detailed sampling and analysis plan would be prepared as part of the RD.</p> <p><u>Groundwater extraction and treatment:</u> Groundwater was to be extracted from the excavation and transferred to the existing Building 891 treatment system for final treatment and discharge.</p> <p><u>French Drain Decommissioning:</u> After all contaminated subsurface soil was excavated and all contaminated groundwater was extracted from the excavation, the French Drain system was to be decommissioned and its use discontinued. The final details of the groundwater extraction and decommissioning of the French Drain system were to be presented in the RD for OU 1.</p> <p><u>Handling and management of excavated soil:</u> DOE considered three options for managing the excavated soil. The option agreed upon among the parties was on-site treatment and placement back into the original excavation. The details of how the excavated soil was to be handled and managed would have been prepared as part of the RD.</p> <p><u>Groundwater monitoring:</u> Groundwater monitoring was to be performed at IHSS 119.1, consistent with the Integrated Water Management Plan, after the remedial action was complete. The details of this groundwater monitoring was to be presented in the RD.</p>	<p>1) The principal components of the amended remedy for IHSS 119.1 selected to meet the RAOs included:</p> <p><u>Downgradient investigation:</u> DOE will perform confirmatory soil sampling downgradient of IHSS 119.1 to verify that a contamination source does not exist there. A detailed sampling and analysis plan will be prepared.</p> <p><u>Groundwater extraction and treatment:</u> Groundwater will continue to be extracted from the extraction well and transferred to the existing Building 891 treatment system for final treatment and discharge.</p> <p><u>French Drain Decommissioning:</u> The French Drain system will be decommissioned and its use will be discontinued. The final details of the decommissioning of the French Drain system will be presented in the RD for OU 1.</p> <p><u>Groundwater monitoring:</u> DOE anticipates that groundwater monitoring will be performed at IHSS 119.1, consistent with the Integrated Water Management Plan, after the remedial action is complete. The details of this groundwater monitoring will be presented in the RD.</p>
<p>2) Institutional controls will be maintained throughout the OU 1 area in a manner consistent with RFCA, Rocky Flats Vision, and the ALF. These documents recognize the reasonably foreseeable future land use for the OU 1 area is restricted open space. The institutional controls will ensure that the restricted open space land use is maintained for the OU 1 area and that domestic use of groundwater is prevented. If the reasonably foreseeable future land use for OU 1 area changes when final sitewide land use decisions are made, this remedy will be reexamined to ensure protectiveness of human health and the environment. The specific mechanisms (for example, deed restrictions) to ensure the implementation and continuity of the necessary institutional controls have not been included in this CAD/ROD. Currently, these mechanisms are envisioned to be placed in the Final Sitewide CAD/ROD or in this CAD/ROD during one of the five-year reviews of this document. However, should the Final CAD/ROD not occur or not include these institutional control mechanisms, this OU 1 CAD/ROD will be revised to include them, if it does not already include them as a result of a five-year review. The institutional controls can also be removed at one of the above times, if it is deemed appropriate to do so by the parties.</p>	<p>2) Institutional controls will be maintained throughout the OU 1 area in a manner consistent with RFCA, Rocky Flats Vision, and the ALF. These documents recognize the reasonably foreseeable future land use for the OU 1 area is restricted open space. The institutional controls will ensure that the restricted open space land use is maintained for the OU 1 area and that domestic use of groundwater is prevented. If the reasonably foreseeable future land use for OU 1 area changes when final sitewide land use decisions are made, this remedy will be reexamined to ensure protectiveness of human health and the environment. The specific mechanisms (for example, deed restrictions) to ensure the implementation and continuity of the necessary institutional controls have not been included in this CAD/ROD. Currently, these mechanisms are envisioned to be placed in the Final Sitewide CAD/ROD or in this CAD/ROD during one of the five-year reviews of this document. However, should the Final CAD/ROD not occur or not include these institutional control mechanisms, this OU 1 CAD/ROD will be revised to include them, if it does not already include them as a result of a five-year review. The institutional controls can also be removed at one of the above times, if it is deemed appropriate to do so by the parties.</p>
<p>3) Because of the groundwater and land use controls, the low amounts of contamination in OU 1 outside of IHSS 119.1, and the low levels of risk associated with the contamination, no remedial action will be taken at the remaining IHSSs in OU 1.</p>	<p>3) Because of the groundwater and land use controls, the low amounts of contamination in OU 1 outside of IHSS 119.1, and the low levels of risk associated with the contamination, no remedial action will be taken at the remaining IHSSs in OU 1.</p>

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RESPONSIVENESS SUMMARY

OVERVIEW

SUMMARY OF COMMENTS RECEIVED DURING PUBLIC COMMENT PERIOD AND DOE RESPONSES